

LISTING OF CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (original): A companion cartridge comprising at least one system chosen from reagent storage system, a calibration fluid system, an assay element preparation system, a carrier fluid system, and a waste retrieval system, said system connected to a sensing cartridge to conduct chemical analysis of at least one assay element.
2. (original): A companion cartridge according to claim 1, wherein: said companion cartridge is adapted to at least one interface with said sensing cartridge chosen from fluid, mechanical, and electrical.
3. (original): A companion cartridge according to claim 1, wherein: said calibration fluid system connects to said waste retrieval system.
4. (original): A companion cartridge according to claim 1, wherein: said assay element preparation system comprises at least one process chosen from blood chemistry, hematology, immuno-diagnostics, and DNA testing.
5. (original): A companion cartridge according to claim 1, wherein: said assay element preparation system comprises at least one operation chosen from thermo cycling, incubation, and isolation.
6. (original): A companion cartridge according to claim 1, wherein: said carrier fluid system adapted to increase at least a portion of the volume of at least one assay element.
7. (original): A companion cartridge according to claim 6, wherein: said carrier fluid system connects to said waste retrieval system.
8. (original): A companion cartridge according to claim 6, wherein:

said carrier fluid remains essentially unmixed with said assay element.

9. (withdrawn): A method of miniature chemical analysis comprising:
at least one unit operation chosen from:

storing at least one reagent on a companion cartridge;

calibrating at least one sensor on a sensing cartridge with calibration
fluid stored on said companion cartridge;

preparing said at least one assay element for said assay;

transporting said at least one of said assay elements with a carrier fluid;

and

retrieving waste from said assay

wherein said sensing cartridge is in fluid contact with said companion cartridge.

10. (withdrawn): A method of miniature chemical analysis according to
claim 9, wherein:

said preparing comprises at least one process chosen from blood chemistry,
hematology, immuno-diagnostics, and DNA testing.

11. (withdrawn): A method of miniature chemical analysis according to
claim 10, wherein:

said process comprises lysis of said assay element.

12. (withdrawn): A method of miniature chemical analysis according to
claim 10, wherein:

said process comprises isolating DNA from said assay element.

13. (withdrawn): A method of miniature chemical analysis according to
claim 10, wherein:

said process comprises amplifying said assay element with PCR.

14. (original): An analytical instrument comprising:

a companion cartridge comprising at least one unit operation chosen from a
reagent storage system, a calibration fluid system, an assay element
preparation system, a carrier fluid system, and a waste retrieval system; and

a sensor cartridge, said sensor cartridge in fluid contact with said companion cartridge, wherein said sensor cartridge provides chemical analysis of at least one assay element.

15. (original): An analytical instrument according to claim 14, wherein: said chemical analysis comprises at least one clinical process chosen from blood chemistry, hematology, immuno-diagnostics, and DNA testing.

16. (original): An analytical instrument according to claim 14, wherein: said chemical analysis comprises lysis of at least one assay element.

17. (original): An analytical instrument according to claim 14, wherein: said chemical analysis comprises isolating DNA from at least one assay element.

18. (original): An analytical instrument according to claim 14, wherein: said chemical analysis comprises amplifying at least one assay element with PCR.

19. (original): A miniature analytical instrument comprising:
a sensor cartridge for chemical analysis of at least one assay element adapted to fluid contact with a removable companion cartridge.

20. (original): A miniature analytical instrument according to claim 19, further comprising:
said companion cartridge in fluid contact with said sensor cartridge, said companion cartridge comprising at least one system chosen from reagent storage system, a calibration fluid system, an assay element preparation system, a carrier fluid system, and a waste retrieval system.